

EXHIBIT R-2, RDT&E Budget Item Justification

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY

RESEARCH DEVELOPMENT TEST & EVALUATION, NAVY /

BA 5

R-1 ITEM NOMENCLATURE

0604270N, EW DEVELOPMENT

COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	48.517	43.276	39.842	25.855	26.854	27.622	28.452	
0556 EW COUNTER RESPONSE	32.771	32.861	33.143	24.427	25.485	26.217	27.015	
1742 EW TECHNICAL DEVELOPMENT	.867	.934	.652	.675	.694	.714	.733	
2175 TACTICAL AIR ELECTRONIC WARFA	12.928	7.516	5.364					
2260 SPECIFIC EMMITTER ID	.697	.715	.683	.753	.675	.691	.704	
9999 CONGRESSIONAL ADD	1.254	1.250						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

(U) This element includes development of electronic warfare systems for the United States Navy (USN), United States Marine Corps (USMC), and United States Army (USA) tactical aircraft, USMC helicopters, surface combatants, data link vulnerability assessments, precision targeting, USMC communications and non-communications jammers, and development and testing of electronic warfare devices for emergency contingencies.

EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /		BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604270N, EW DEVELOPMENT			PROJECT NUMBER AND NAME 0556, EW COUNTER RESPONSE		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011		
0556 EW COUNTER RESPONSE	32.771	32.861	33.143	24.427	25.485	26.217	27.015		
RDT&E Articles Qty									
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>(U) This Program Element (PE) develops upgrades to cope with the increasingly complex and dense threat environment. The required improvements in EA-6B Electronic Attack (EA) will be achieved by applying state-of-the-art signal exploitation/processing/display techniques, improved tactics and jamming capabilities. Tactical communications connectivity improvements include Joint Tactical Terminal and Tactical Receive Equipment (TRE) Related Applications (TRAP), Tactical Digital Information Exchange System-B (TADIXS-B), Tactical Digital Information Link-J (TADIL-J), Tactical Information Broadcast Services (TIBS), Tactical Reconnaissance Information Exchange System (TRIXS), USN/USAF Advisory Support Network (ASN) Intelnet, Demand Assigned Multiple Access (DAMA)-capabilities within ForceNet. The EA-6B weapon system is ultimately designed for precision targeting, jamming and destruction of enemy land based, ship borne and airborne command, control and communications (C3), and radars associated with early warning, target acquisition surveillance, anti-aircraft artillery, air-to-surface, surface-to-surface, and surface-to-air missiles. In this capacity, the EA-6B will support both carrier based tactical aircraft strike group operations, and joint forces, in dense radar controlled environments. This PE is directly supporting emerging asymmetric threats currently being addressed by the United States Navy (USN) and the Department of Defense (DOD). These efforts include the continued development of Force Protection/Glodal War on Terror (GWOT) (classified discussion upon request), Navigation (NAV) and Information Operations (I/O) applications, increased night vision and tracking capabilities, and enhanced communications jamming. The efforts under this program element provide for the electronic countermeasures response to these advanced threat weapon systems and C3 networks which are expanding in density and technical complexity. This PE funds the continuing development and integration of all EW and EA systems for the EA-6B electronic attack aircraft including improvements within precision Direction of Arrival (DOA), geo-location, Specific Emitter Identification (SEI), auto-ESM, and selective reactive jamming.</p> <p>The test articles begun in FY 1999 are; two EA-6B aircraft modified to support the Improved Capability (ICAP) III program and Low Band Transmitter (LBT) Engineering Development Models (EDMs). The two EA-6B ICAP III aircraft will be used as test articles during government test and evaluation of MIDS/Link-16 and other EW improvements. The LBT EDMs are broken out as LBT Antenna Set EDMs and Amplifier Set EDMs. The ALQ-99 LBT Antenna Group will provide an expanded war fighting capability against the early warning/acquisition radars and communication links of modern integrated air defense systems. The LBT entered E&MD in September 1996, followed by Low Rate Initial Production (LRIP) in FY 2005 and Full Rate Production (FRP) approval (Milestone III) anticipated in FY 2007. All efforts and system upgrades include the conversion of and transition from the Tactical EA-6B Mission System (TEAMS) mission planner software to the Joint Mission Planning System (JMPS), including development of EA-6B Unique Planning Modules.</p> <p>A requirement exists to allow the EA-6B to participate in various coordinated targeting scenarios such as Network Centric Warfare, Force Net, improved Suppression of Enemy Air Defenses/Destruction of Enemy Air Defenses, (SEAD/DEAD), and other strategic-and theatre-based DOD networks and strategies. Likewise, the ICAP III system shall be matured to enable the fusion and correlation of both organic and non-organic threat information to better present sensor and targeting information to the theatre commander via coordinated efforts with other airborne, ground and ship-based operations. A method of implementing this requirement is to include the EA-6B on the Link-16 EW Network. Incorporation of the full EW Link-16 message set into the EA-6B and participation of the ICAP III within the Network Centric Warfare arena will greatly improve the Strike Group Commander's situational awareness.</p>									

EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604270N, EW DEVELOPMENT		PROJECT NUMBER AND NAME 0556, EW COUNTER RESPONSE
B. ACCOMPLISHMENTS / PLANNED PROGRAM:				
	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	.250			
RDT&E Articles Qty				
<p>FIBER OPTIC</p> <p>(U) Complete the development of the Fiber Optic Wave Division Multiplexing Flight Testing Optical Communications using Open Standards (FOCUS) 2 for the developmental testing, and the EA-6B lab at Point Mugu and Crane, for the Highly Integrated Photonics (HIP).</p>				
	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	9.004	10.254	11.608	
RDT&E Articles Qty				
<p>JATO</p> <p>(U) Continue software development and test support required to address and counter new threat development for both the ICAP II and ICAP III EA configurations. JATO will continue to optimize and generate tactics and techniques as the full potential of the ALQ-218's selective reactive jamming capabilities are developed and employed. JATO will optimize the fusion and correlation of the ALQ-218 tracks with other national asset contacts. JATO also continues to lead our efforts in Force Protection/GWOT (classified discussion upon request) and Next Generation Jammer.</p>				
	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	1.462	2.259	2.403	
RDT&E Articles Qty				
<p>LINK-16 MESSAGE SETS AND DATA LINKS</p> <p>(U) Complete testing and correction of deficiencies of the Link-16 modification. Mature the ICAP III weapon system and Link 16 network participation to its full potential by incorporating additional Electronic Warfare message sets enabling full integration with other EW national assets. These data link enhancements will enable the EA-6B ICAP III participation within Force Net and facilitate the EA contributions to the greater situational awareness allowed by NetWork Centric Warfare efforts.</p>				

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EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2006
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	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	1.485	1.810	2.823	
RDT&E Articles Qty				

MISSION PLANNING

(U) Replacement of the Tactical EA-6B Mission System (TEAMS) with the Joint Mission Planning Systems (JMPS) and associated EA-6B Unique Planning Components (UPC's).

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	8.293	14.403	14.483	
RDT&E Articles Qty				

ICAP III UPDATE

(U) Continue optimizing the ICAP III weapon system performance to include integration of both software upgrades and avionics items which include the second Embedded Global Positioning System/Inertial Navigation System (EGI), HARM, ALE-47, Low Band Transmitter, Band 7/8, Night Vision Devices (NVDs), USQ-113 software improvements and data fusion with national assets. The course of maturing ICAP III to full potential in the ForceNet environment will consist of 4 Block upgrades to deliver approximately 15 months apart.

	FY 2005	FY 2006	FY 2007	
Accomplishments / Effort / Sub-total Cost	12.277	4.135	1.826	
RDT&E Articles Qty				

ICAP III

(U) Continue development of ICAP III system. Efforts will concentrate on completing the integration and enhancement of Link-16 capability into the ICAP III aircraft as well as resolving the related OPEVAL/VCD issues associated with the integration of Link-16.

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EXHIBIT R-2a, RDT&E Project Justification								DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /			PROGRAM ELEMENT NUMBER AND NAME BA 5 0604270N, EW DEVELOPMENT			PROJECT NUMBER AND NAME 0556, EW COUNTER RESPONSE			
C. PROGRAM CHANGE SUMMARY									
Funding:		FY 2005	FY 2006	FY 2007					
Previous President's Budget:		33.558	33.362	32.775					
Current President's Budget:		32.771	32.861	33.143					
Total Adjustments		<u>-0.787</u>	<u>-0.501</u>	<u>0.368</u>					
Summary of Adjustments									
Congressional Reductions									
Congressional Rescissions									
Congressional Undistributed Reductions		-0.548	-0.349						
Congressional Increases		0.007							
Economic Assumptions			-0.152	0.368					
Miscellaneous Adjustments		-0.246							
Subtotal		<u>-0.787</u>	<u>-0.501</u>	<u>0.368</u>					
Schedule:									
ICAP III Full Rate Production (FRP) moved to FY05. The two primary factors in the schedule slip were software development and lack of test assets. The ICAP III program completed operational testing (OPEVAL) on 3 Sept 2004, and completed and passed Verification for Correction of Deficiencies in August 2005.									
Technical:									
Not Applicable.									
D. OTHER PROGRAM FUNDING SUMMARY:									
P-1 # 25, EA-6 Series	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
	126.709	120.619	48.983	22.707	18.059	18.342	18.732	367.188	741.339

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EXHIBIT R-2a, RDT&E Project Justification		DATE:
		February 2006
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	BA 5	0604270N, EW DEVELOPMENT
<p>E. ACQUISITION STRATEGY:</p> <p>The LBT development contract occurred following a full and open competition and was awarded to BAE Systems (formerly MARCONI). Following development and successful DT/OA, sole source LRIP contracts will be awarded. Following successful OT, a sole source production contract was awarded.</p> <p>The ICAP III contract, an E&MD CPIF/AF basic contract with two Fixed Price Incentive (FPI) production options, was awarded to a Northrop Grumman team in March 1998 following Milestone II and a full and open competition. The contract was changed to a CPAF contract in FY 1999. LRIP contract award was completed in FY 2003. Milestone III and Full Rate Production discussions were completed in November 2005 with Initial Operating Capability in September 2005.</p>		

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Exhibit R-3 Cost Analysis (page 1)									DATE:		February 2006		
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /		PROGRAM ELEMENT 0604270N, EW DEVELOPMENT				PROJECT NUMBER AND NAME 0556, EW COUNTER RESPONSE							
	Contract Method & Type		Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
Cost Categories		Performing Activity & Location											
PRODUCT DEVELOPMENT													
AWARD FEES- ICAP III		C-CPAF NORTHROP GRUMMAN SYS, NY	6.665	1.906	10/30/2004						8.571	8.571	
PHD - ICAP III Blk Updates/MIDS		C-BOA NORTHROP GRUMMAN SYS, NY	8.498	2.000	10/4/2004	7.209	10/31/2005	8.128	10/31/2006	17.500	43.335	43.335	
PRIMARY HDW DEVELOP-ICAP III		C-CPAF NORTHROP GRUMMAN SYS, NY	245.304	1.101	1/7/2005	3.508	11/30/2005	1.642	11/30/2006	13.750	265.305	265.305	
SYSTEMS ENGINEERING		WX NAWCAD, PATUXENT RIVER MD	29.752	2.115	10/30/2004	6.331	10/30/2005	5.147	10/31/2006	continuing	continuing		
SYSTEMS ENGINEERING		WX NAWCWD, PT MUGU CA	30.866	9.204	10/30/2004	4.557	10/31/2005	5.541	10/31/2006	continuing	continuing		
SYSTEMS ENGINEERING		WX NRL, WASHINGTON DC	9.787			.800	10/31/2005	1.000	10/31/2006	continuing	continuing		
SYSTEMS ENGINEERING		VARIOUS VARIOUS	59.501	1.440	VARIOUS	1.073	VARIOUS	1.335	VARIOUS	continuing	continuing		
SYSTEMS ENGINEERING		WX NSWC DET, CRANE IN	12.967	1.994	VARIOUS	.925	VARIOUS	1.020	10/31/2006	continuing	continuing		
SUBTOTAL PRODUCT DEVELOPMENT			403.340	19.760		24.403		23.813		continuing	continuing		
Remarks: FY04 and prior award fee earned is 80% (ICAP III).													
DEVELOPMENT SUPPORT -JATO		SS/FP JOHNS HOPKINS UNIV, COLUMBIA, MD	11.853	2.551	1/31/2005	2.114	1/31/2006	2.304	1/31/2007	10.500	29.322	29.322	
ENGINEERING & TECH SRVC (NON-FFRDC)		VARIOUS VARIOUS	12.009	1.145	VARIOUS						13.154	13.154	
ENGINEERING & TECH SRVC (NON-FFRDC)		VARIOUS NORTHROP GRUMMAN SYS, NY		1.000	10/30/2004						1.000	1.000	
SUBTOTAL SUPPORT			23.862	4.696		2.114		2.304		10.500	43.476		
Remarks:													
TEST & EVALUATION													
DEV TEST & EVAL-ICAP III		WX NAWCWD, CHINA LAKE CA		.200	12/30/2004						.200		
DEV TEST & EVAL - ICAP III UPDATE		WX NAWCAD, PATUXENT RIVER MD	8.522	5.668	12/31/2004	2.475	10/31/2005	2.650	10/31/2006		19.315		
DEVELOPMENTAL TESTING - MP		WX NAWCWD, PT MUGU CA	.400			.484	10/31/2005	.850	10/31/2006	3.651	5.385		
OPER TEST & EVAL - ICAP III UPDATE		WX OPER T & E FOR CD 30, NORFOLK VA				2.785	10/31/2005	2.850	10/31/2006		5.635		
OPER TEST & EVAL- ICAP III		WX OPER T & E FOR CD 30, NORFOLK VA	11.756	.045	1/30/2005						11.801		
OPERATIONAL TEST & EVAL- MP		WX OPER T & E FOR CD 30, NORFOLK VA	.200			.200	12/31/2005	.200	12/31/2006	1.071	1.671		
SUBTOTAL TEST & EVALUATION			20.878	5.913		5.944		6.550		4.722	44.007		
Remarks: Funding is required to conduct ICAP III and LBT developmental/operational test planning, execution and reporting.													
MANAGEMENT													
GOV ENGINEERING SUPT-MP		WX NAWCWD, PT MUGU CA	.200	1.485	12/31/2004	.400	10/31/2005	.475	10/31/2006	2.777	5.337		
PROGRAM MGMT SUPPORT		WX NAWCAD, PATUXENT RIVER MD	1.306	.625	12/19/2004						1.931		
TRAVEL		TO NAVAIR HQ		.271	10/30/2004						.271		
TRAVEL-NATEC		WX NAV AIR TEC EN SV CMD, SAN DIEGO CA		.021	10/30/2004						.021		
SUBTOTAL MANAGEMENT			1.506	2.402		.400		.475		2.777	7.560		
Remarks:													
Total Cost			449.586	32.771		32.861		33.143					
Remarks:													

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CLASSIFICATION:

EXHIBIT R4, Schedule Profile

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY

RDT&E, N /

BA-5

PROGRAM ELEMENT NUMBER AND NAME

0604270N, EW DEVELOPMENT

PROJECT NUMBER AND NAME

0556, EW COUNTER RESPONSE

Fiscal Year	FY 2005				FY 2006				FY 2007				FY 2008				FY 2009				FY 2010				FY 2011							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones																																
LBT																																
ICAP III																																
Test & Evaluation Milestones																																
ICAP III Development Test/ Operational Test																																
Production Milestones																																
LBT LRIP Start - FY05 FRP Start - FY07																																
ICAP III LRIP FY03-FY05																																
ICAP III FRP Award - FY05																																
FRP Award - FY06																																
Deliveries																																

* Not required for Budget Activities 1, 2, 3, and 6

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R-1 Shopping List Item No 98

Exhibit R-4, Schedule Profile
(Exhibit R-4, page 8 of 35)

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CLASSIFICATION:

[illegible]

CLASSIFICATION: UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY

RDT&E, N / BA-5

PROGRAM ELEMENT NUMBER AND NAME

0604270N Electronic Warfare Development

PROJECT NUMBER AND NAME

Z1742 EW Technical Development

COST (\$ in Millions)

FY 2005

FY 2006

FY 2007

FY 2008

FY 2009

FY 2010

FY 2011

Project Cost

0.867

0.934

0.652

0.675

0.694

0.714

0.733

RDT&E Articles Qty

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

Skunkworks is a CNO N71R3 funded effort that focuses on the quick reaction prototyping of tactical information warfare systems. This program directly addresses various fleet requirements, cryptological operational requirements documents and the joint requirements oversight council mission needs statement for information warfare systems and capabilities across the spectrum of conflict. The projects developed under this program are designed to deny, degrade, disrupt or destroy enemy command and control communications. These systems provide information dominance to friendly forces during conflict, which is necessary for successful mission accomplishment.

Exhibit R-2a, RDTEN Project Justification

(Exhibit R-2a, page 10 of 35)

CLASSIFICATION: UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

RDT&E, N / BA-5

0604270N Electronic Warfare Development

Z1742 EW Technical Development

B. Accomplishments/Planned Program (Cont.)

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.437	0.644	0.448
RDT&E Articles Quantity		N/A	N/A	N/A

-(U) Continue airborne Information Warfare jammer development, test and evaluation.

		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.430	0.290	0.204
RDT&E Articles Quantity		N/A	N/A	N/A

-(U) Continue aircraft Information Warfare system design.

Exhibit R-2a, RDTEN Project Justification

(Exhibit R-2a, page 11 of 35)

CLASSIFICATION: UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification

DATE:

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APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

RDTE, N / BA-5

0604270N Electronic Warfare Development

Z1742 EW Technical Development

C. PROGRAM CHANGE SUMMARY:

Funding:	FY 05	FY 06	FY 07
Previous President's Budget:	0.875	0.948	1.147
Current President's Budget	0.867	0.934	0.652
Total Adjustments	-0.008	-0.014	-0.495

Summary of Adjustments

Congressional Reductions			
Congressional Rescissions			
Congressional Undistributed Reductions	-0.014	-0.010	
Congressional Increases			
Economic Assumptions		-0.004	0.003
Miscellaneous Adjustments	0.006		-0.498
Subtotal	-0.008	-0.014	-0.495

Schedule:

Not Applicable

Technical:

Not Applicable

CLASSIFICATION: UNCLASSIFIED

EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

RDTE, N / BA-5

0604270N Electronic Warfare Development

Z1742 EW Technical Development

D. OTHER PROGRAM FUNDING SUMMARY:

<u>Line Item No. & Name</u>	<u>FY 2005</u>	<u>FY 2006</u>	<u>FY 2007</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>To Complete</u>	<u>Total Cost</u>
Not Applicable									

E. ACQUISITION STRATEGY:

- Not Applicable

CLASSIFICATION:

Exhibit R-3, Project Cost Analysis
(Exhibit R-3, page 14 of 35)

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CLASSIFICATION:

[illegible]

CLASSIFICATION: UNCLASSIFIED

Exhibit R-3 Cost Analysis (page 2)

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY

RDT&E, N / BA-5

PROGRAM ELEMENT

0604270N Electronic Warfare Development

PROJECT NUMBER AND NAME

Z1742 EW Technical Development

Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 05 Cost	FY 05 Award Date	FY 06 Cost	FY 06 Award Date	FY 07 Cost	FY 07 Award Date	Cost to Complete	Total Cost	Target Value of Contract
Developmental Test & Evaluation	Various	Various	1.110	0.180	Various	0.200	Various	0.150	Various	0.600	2.240	
Operational Test & Evaluation											0.000	
Live Fire Test & Evaluation											0.000	
Test Assets											0.000	
Tooling											0.000	
GFE											0.000	
Award Fee												
											0.000	
Subtotal T&E			1.110	0.180		0.200		0.150		0.600	2.240	

Remarks:

Contractor Engineering Support	Various	Various	0.558	0.100	Various	0.113	Various	0.063	Various	0.379	1.213	
Government Engineering Support	Various	Various	0.515	0.101	Various	0.115	Various	0.045	Various	0.480	1.256	
Program Management Support											0.000	
Travel											0.000	
Transportation											0.000	
SBIR Assessment											0.000	
Subtotal Management			1.073	0.201		0.228		0.108		0.859	2.469	

Remarks:

Total Cost			4.458	0.867		0.934		0.652		4.770	11.681	
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Remarks:

CLASSIFICATION: UNCLASSIFIED

EXHIBIT R4, Schedule Profile

DATE:
February 2006

APPROPRIATION/BUDGET ACTIVITY
RDT&E,N / BA-5

PROGRAM ELEMENT NUMBER AND NAME
0604270N Electronic Warfare Development

PROJECT NUMBER AND NAME
Z1742 Technical Development

Fiscal Year	2004				2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
P-3																																
P3 Airborne System Dev																																
P3 Aircraft Integration										AC3 △	AC 4 △		AC 5 △				AC 6 △				AC 7 △				AC 8 △							
P3 Testing											AC 3 △ AC 4 △			AC 5 △				AC 6 △				AC 7 △				AC 8 △						
UAV: TBD																																
ACS: 2015-20017																																

CLASSIFICATION: UNCLASSIFIED

Exhibit R-4a, Schedule Detail

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY

RDT&E,N / BA-5

PROGRAM ELEMENT

0604270N Electronic Warfare Development

PROJECT NUMBER AND NAME

Z1742 Technical Development

Schedule Profile

FY 2005

FY 2006

FY 2007

FY 2008

FY 2009

FY 2010

FY 2011

Airborne System Development

P3 Airborne System Development

1Q-4Q

1Q

P3 Aircraft Integration

3Q

2Q

2Q

2Q

P3 Developmental Testing

4Q

1Q+3Q

3Q

3Q

3Q

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EXHIBIT R-2a, RDT&E Project Justification								DATE:
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME	
RDT&E, N / BA 5		0604270N, EW DEVELOPMENT					2175, TACTICAL AIR ELECTRONIC WARFA	
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
2175 TACTICAL AIR ELECTRONIC WARFA	12.928	7.516	5.364					
RDT&E Articles Qty								
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: This subproject develops the new techniques generator and fiber optic towed decoy of the Radio Frequency Countermeasures (RFCM) Subsystem. It also integrates IDECM Block 3 (the RFCM and FOTD) with the rest of the Electronic Warfare (EW) suite (i.e., Radar Warning Receiver (RWR) and Countermeasures Dispensing Set (CMDS)), the associated cockpit controls, displays and other avionics for the lead aircraft (F/A-18E/F).</p>								

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EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2006																																													
APPROPRIATION/BUDGET ACTIVITY RDT&E, N /		PROGRAM ELEMENT NUMBER AND NAME BA 5 0604270N, EW DEVELOPMENT		PROJECT NUMBER AND NAME 2175, TACTICAL AIR ELECTRONIC WARFA																																													
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EXHIBIT R-2a, RDT&E Project Justification		DATE: February 2006																																																
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R-1 Shopping List Item No 98

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Exhibit R-3 Cost Analysis (page 1)									DATE:		February 2006		
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT				PROJECT NUMBER AND NAME							
RDT&E, N /		0604270N, EW DEVELOPMENT				2175, TACTICAL AIR ELECTRONIC WARFA							
BA 5													
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract	
PRODUCT DEVELOPMENT													
Aircraft Integration	SS-FFP	THE BOEING COMPANY, SAINT LOUIS, MO				.200	2/1/2006	.250	2/1/2007		.450	.450	
Ancillary Hdw Dev - IMPLC	SS-CPFF	RAYTHEON COMPANY, GOLETA, CA						.400	2/1/2007		.400	.400	
Ancillary Hdw Dev - Navy Only FOTD	VARIOUS	VARIOUS						.350	VARIOUS		.350	.350	
EMD Support (IDECM)	SS-BOA	BAE SYSTEMS INFO.&ELEC.SYS.INTEGRAT	8.405					.500	3/1/2007		8.905	8.905	
Systems Eng	C-CPIF	BAE SYSTEMS INFO.&ELEC.SYS.INTEGRAT	.600	7.322	12/15/2004	.580	3/1/2006				8.502	8.502	
Systems Eng	C-CPIF	NAWCWD, CHINA LAKE CA	62.159					.450	3/1/2007		62.609	62.609	
SUBTOTAL PRODUCT DEVELOPMEN				71.164	7.322	.780		1.950			81.216		
Remarks:													
SUPPORT													
Integrated Logistics Support	VARIOUS	VARIOUS	.550	.384	VARIOUS			.200	VARIOUS		1.134		
Software Development	WX	NAWCWD, PT MUGU CA	.699	.208	11/15/2004						.907		
SUBTOTAL SUPPORT				1.249	.592			.200			2.041		
Remarks:													
TEST & EVALUATION													
Engineering/Logistic Support	WX	NAWCAD, PATUXENT RIVER MD	26.972	2.285	12/1/2004	1.192	11/1/2005				30.449		
Engineering/Logistic Support	WX	NAWCWD, CHINA LAKE CA	3.000	1.480	12/1/2004	2.852	11/1/2005	1.850	11/1/2006		9.182		
Engineering/Logistic Support	VARIOUS	VARIOUS	.150	.381	VARIOUS						.531		
Engr/Log Spt - ETS (NON-FFRDC)	VARIOUS	VARIOUS	.352	.417	VARIOUS			.200	VARIOUS		.969		
Flight Test	WX	NAWCWD, CHINA LAKE CA		.156	11/1/2004						.156		
Miscellaneous (efforts < \$1M each)	WX	TBD						.100	12/1/2006		.100		
Test Support (OTEVFOR)	WX	OPER T & E FOR CD 30, NORFOLK VA	1.110	.010	10/1/2004	2.052	11/1/2005	.800	10/1/2006		3.972		
Test Support - ETS (NON-FFRDC)	RX	OPER T & E FOR CD 30, NORFOLK VA	.276			.464	12/1/2005				.740		
SUBTOTAL TEST & EVALUATION				31.860	4.728		6.560		2.950		46.098		
Remarks: Totals may not add due to rounding.													
MANAGEMENT													
Program Mgmt Support	VARIOUS	VARIOUS	19.127	.196	VARIOUS	.080	VARIOUS	.239	VARIOUS		19.642		
Travel	TO	NAVAIR HQ	.240	.090	10/1/2004	.096	10/1/2005	.025	10/1/2006		.451		
SUBTOTAL MANAGEMENT				19.367	.286		.176		.264		20.093		
Remarks:													
Total Cost				123.640	12.928		7.516		5.364		149.448		
Remarks:													

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EXHIBIT R4, Schedule Profile																				DATE:								
																				February 2006								
APPROPRIATION/BUDGET ACTIVITY					PROGRAM ELEMENT NUMBER AND NAME										PROJECT NUMBER AND NAME													
RDT&E, N/BA-5					0604270N Electronic Warfare Development										2175 TACAIR ELECTRONIC WARFARE													
Fiscal Year	2005				2006				2007				2008				2009				2010				2011			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Acquisition Milestones	IOC ★ IB-2							MS III △ IB-3		IOC ★ IB-3																		
IB-3 Development	Envelope Expansion /DT / Combined DT/OT																											
Software	IB-2 / IB-3 UPDATES																											
Navy Only Requirement FOTD	▲	Development																										
Test & Evaluation Milestones																												
IB-3 Development	DT																											
Navy Only Requirement FOTD																												
IB-3 Integrated DT/OT																												
Production Milestones																												
ALQ-214 (IB2)	FRP 2 ▲					FRP 3 △				FRP 4 △				FRP 5 △				FRP 6 △				FRP 7 △				FRP 8 △		
Navy Only Requirement FOTD (IB3)						LRIP 4 △				FRP 1 △				FRP 2 △				FRP 3 △				FRP 4 △				FRP 5 △		
Deliveries																												
ALQ-214			LRIP 3			FRP1				FRP2				FRP3				FRP 4				FRP 5				FRP 6		
Navy Only Requirement FOTD										LRIP 4				FRP 1				FRP 2				FRP 3				FRP 4		

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Exhibit R-4a, Schedule Detail

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY RDT&E, N/BA-5	PROGRAM ELEMENT 0604270N Electronic Warfare Development				PROJECT NUMBER AND NAME 2175 TACAIR ELECTRONIC WARFARE			
Schedule Profile	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
IB-2 MILESTONE III (IB-2)								
IB-2 IOC (IDECM BLOCK 2)	1Q							
IB-3 MILESTONE III		4Q						
IB-3 IOC			2Q					
IB-3 Development, Envelope Expansion/Combined DT/OT	1Q-4Q	1Q-2Q						
IB-2/ IB-3 Updates (Software)	1Q-4Q	1Q-3Q						
Navy Only FOTD Development	1Q-4Q	1Q-2Q						
IB-3 Development DT	1Q-2Q	1Q-2Q						
IB-3 Integrated DT/OT		2Q-4Q						
ALQ-214 FRP 1 (Production IB-2)								
ALQ-214 FRP 2 (Production IB-2)	1Q							
ALQ-214 FRP 3 (Production IB-2)		2Q						
ALQ-214 FRP 4 (Production IB-2)			2Q					
ALQ-214 FRP 5 (Production IB-2)				2Q				
ALQ-214 FRP 6 (Production IB-2)					2Q			
ALQ-214 FRP 7 (Production IB-2)						2Q		
ALQ-214 FRP 8 (Production IB-2)							2Q	
Navy Only Requirement FOTD LRIP 4 (IB-3)		2Q						
Navy Only Requirement FOTD FRP 1 (Production - IB-3)			2Q					
Navy Only Requirement FOTD FRP 2 (Production - IB-3)				2Q				
Navy Only Requirement FOTD FRP 3 (Production - IB-3)					2Q			
Navy Only Requirement FOTD FRP 4 (Production - IB-3)						2Q		
Navy Only Requirement FOTD FRP 5 (Production - IB-3)							2Q	
ALQ-214 LRIP 2 DELIVERIES								
ALQ-214 LRIP 3 DELIVERIES	2Q							
ALQ-214 FRP 1 DELIVERIES		1Q						
ALQ-214 FRP 2 DELIVERIES			1Q					
ALQ-214 FRP 3 DELIVERIES				1Q				
ALQ-214 FRP 4 DELIVERIES					1Q			
ALQ-214 FRP 5 DELIVERIES						1Q		
ALQ-214 FRP 6 DELIVERIES							1Q	
Navy Only Requirement FOTD LRIP 4 DELIVERIES			2Q					
Navy Only FOTD FRP 1 Deliveries				2Q				
Navy Only FOTD FRP 2 Deliveries					1Q			
Navy Only FOTD FRP 3 Deliveries						1Q		
Navy Only FOTD FRP 4 Deliveries							1Q	

LRIP 2 in the FY 2006 President's Budget has been changed to LRIP 4 due to a typographical error. LRIP 3 deliveries have been completed.

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EXHIBIT R-2a, RDT&E Project Justification							DATE: February 2006	
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604270N ELECTRONIC WARFARE DEVELOPMENT					PROJECT NUMBER AND NAME R2260 SPECIFIC EMITTER ID		
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	0.697	0.715	0.683	0.753	0.675	0.691	0.704	
RDT&E Articles Qty								
<p>(U) A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>This project supports systems development and collection of Specific Emitter Identification (SEI) information from National Technical Means (NTM) to track commercial ships over 200 gross registered tons world-wide. Research and development will cover improvements and enhancements to Electronic Intelligence technology. This will include improved/next generation SEI technology for miniaturization and automation of hardware, national collection systems, signal processing and analysis, and de-interleaving of signals. Propagation in a multi-path signal environment will also be assessed. All work on this project will be undertaken in pursuit of goals stated by the Office of Naval Intelligence and the National Security Agency in support of the Worldwide Ship Tracking Program.</p>								

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EXHIBIT R-2a, RDT&E Project Justification

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY

PROGRAM ELEMENT NUMBER AND NAME

PROJECT NUMBER AND NAME

RDT&E, N / BA-5

0604270N ELECTRONIC WARFARE DEVELOPMENT

R2260 SPECIFIC EMITTER ID

(U) B. Accomplishments/Planned Program

	FY 05	FY 06	FY 07
SENSOR FUSION	0.100	0.196	0.278
RDT&E Articles Quantity			

This effort supports systems development and information fusion of improved Specific Emitter Identification (SEI) technology for automation of hardware, national collection systems, signal processing and analysis, and de-interleaving of signals. FY05: Completed task to deploy Windows based SEI (WINSEI) version 6.0. With many enhancements to aid in sensor fusion. Delivered software to tactical and operational SEI collection sites enabling additional capabilities to collection assets. Completed support integration of sensor suite at operational chokepoint enabling better situational awareness for data fusion. Initiated task to perform sensor fusion between Automatic Identification System (AIS) and SEI data. Fusion of AIS and SEI data will enable more robust signal detection and tracking. Completed task to incorporate AIS data into WINSEI operational display allowing the operator to observe, record, and attempt fusion of AIS with SEI data. AIS contacts are displayed on the screen for the operator to see, and allows them to easily slew antennas to AIS contacts for SEI data collection. WINSEI is now capable of interfacing with several leading AIS receivers and their associated reporting formats. AIS data is captured within WINSEI for logging. FY06: Continue all efforts of FY05 less those noted as completed above. Initiate task to fuse additional sources of data with SEI for automation of hardware, national collection systems, signal processing and analysis, and de-interleaving of signals. Work toward increasing sensor fusion, collection and reporting automation to help reduce staffing and support remote access and control capability. FY07: Continue all efforts of FY06 less those noted as completed above. Complete task to fuse AIS data with SEI data within WINSEI and the SEI database.

	FY 05	FY 06	FY 07
SYSTEM AUTOMATION	0.297	0.222	0.203
RDT&E Articles Quantity			

This effort supports development of an autonomous surveillance system capable of providing emitter signal information to a central location. FY05: Completed evaluation of SEI match functions. This task has successfully identified critical information necessary to optimize the use of SEI for tactical and operational users. Information is being documented and disseminated to SEI user communities and will aid in development of SEI collection concept of operations (CONOPS). Initiated update of the SEI database within WINSEI. Associated to this was the implementation of an improved database lookup within WINSEI (Version 6.0). This development allows much faster database queries and results. Initiated task to automate fusion of AIS and other sensor information with SEI data. FY05 task completed under Sensor Fusion allowed WINSEI to accept data from multiple AIS receivers and display that data within WINSEI. This has paved the way for research in the automation of this powerful capability. FY06: Continue all efforts of FY05 less those noted as completed above. Complete update of existing SEI database within WINSEI to increase performance and content within the database. Database will be structured to be dynamic and have the capability to hold different forms of data to aid in signal identification and tracking. Initiate task to develop an unmanned, autonomous, remote collection and surveillance system. FY07: Continue all efforts of FY06 less those noted as completed above.

	FY 05	FY 06	FY 07
TECHNOLOGY REFRESH & COMMUNICATION ENHANCEMENT	0.300	0.297	0.202
RDT&E Articles Quantity			

This effort improves SEI system performance, real-time communication and tactical use of SEI which will be expanded with next generation SEI technology. FY05: Initiated integration of advanced SEI hardware with WINSEI software to support improved SEI system performance and capabilities for tactical and technical use, and which can be expanded with next generation SEI algorithms. Completed implementation of an upgraded SEI algorithm to aid in collection across radar modes. Completed implementing message reporting upgrades to make SEI collections available to a wider community of users. Initiated task to incorporate further message reporting formats for dissemination and importation of SEI data. This will improve SEI system performance, communication, and interoperability. FY06: Continue all efforts of FY05 less those noted as completed above. Initiate task to incorporate other SEI algorithms into deployed processing software. FY07: Continue all efforts of FY06 less those noted as completed above. Complete task to incorporate other SEI algorithms into deployed processing software.

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APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA-5	PROGRAM ELEMENT NUMBER AND NAME 0604270N ELECTRONIC WARFARE DEVELOPMENT	PROJECT NUMBER AND NAME R2260 SPECIFIC EMITTER ID
<p>(U) D. OTHER PROGRAM FUNDING SUMMARY:</p> <p>Not Applicable</p> <p>(U) E. ACQUISITION STRATEGY:</p> <p>This is a non-acquisition Research and Development Program.</p>		

CLASSIFICATION: UNCLASSIFIED

EXHIBIT R4, Schedule Profile

DATE:
February 2006

APPROPRIATION/BUDGET ACTIVITY

RDT&E, N / BA-5

PROGRAM ELEMENT NUMBER AND NAME

0604270N ELECTRONIC WARFARE DEVELOPMENT

PROJECT NUMBER AND NAME

R2260 SPECIFIC EMITTER ID

Fiscal Year	2005				2006				2007				2008				2009				2010				2011				2012			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Sensor Fusion & Automation System																																
	Demonstration				Deployment				Demonstration				Deployment																			
Autonomous Surveillance System																																
	Demo System				Deployment				Deployment				Deployment				Deployment								Deployment							
Enhanced SEI System																																
	Demonstration				Deployment				Deployment				Deployment				Deployment				Deployment				Deployment				Deployment			

CLASSIFICATION: UNCLASSIFIED

Exhibit R-4a, Schedule Detail

DATE:

February 2006

APPROPRIATION/BUDGET ACTIVITY

RDT&E, N / BA-5

PROGRAM ELEMENT

0604270N ELECTRONIC WARFARE DEVELOPMENT

PROJECT NUMBER AND NAME

R2260 SPECIFIC EMITTER ID

Schedule Profile

FY 2005

FY 2006

FY 2007

FY 2008

FY 2009

FY 2010

FY 2011

FY 2012

Demonstrate Sensor Fusion & Autonomous System

4Q

Demonstrate Feasibility of Autonomous Surveillance System

Demonstrate Completed Autonomous Surveillance System

Deploy Automated SEI System with Sensor Fusion

Deploy Next generation SEI hardware

4Q

4Q

4Q

4Q

4Q

4A

4Q

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EXHIBIT R-2a, RDT&E Project Justification								DATE:
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME					PROJECT NUMBER AND NAME	
RDT&E, N / BA 5		0604270N, EW DEVELOPMENT					9999 Congressional Adds	
COST (\$ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Project Cost	1.254	1.250						
RDT&E Articles Qty	Not Applicable							
<p>A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:</p> <p>CONGRESSIONAL ADD.</p> <p>The project augments and improves existing infrared signature reduction located at Crane Naval Surface along with Purdue University.</p>								

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EXHIBIT R-2a, RDT&E Project Justification				DATE: February 2006															
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 5		PROGRAM ELEMENT NUMBER AND NAME 0604270N, EW DEVELOPMENT		PROJECT NUMBER AND NAME 9999 Congressional Adds															
<p>B. ACCOMPLISHMENTS / PLANNED PROGRAM:</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td style="width: 25%;">9499</td> <td style="width: 15%;">FY 2005</td> <td style="width: 15%;">FY 2006</td> <td style="width: 15%;">FY 2007</td> <td style="width: 30%;"></td> </tr> <tr> <td>Accomplishments / Effort / Sub-total Cost</td> <td style="text-align: center;">1.254</td> <td style="text-align: center;">1.250</td> <td></td> <td></td> </tr> <tr> <td>RDT&E Articles Qty</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p>FY 2005 and 2006 Congressional Add. 9499, IR SIGNATURE REDUCTION TO MITIGATE TERRORIST MISSILES</p> <p>The proliferation of fourth generation shoulder-launched infrared (IR) sensing missiles provides one of the greatest challenges to national security at the present time. The Navy is looking for ways to reduce the threat IR missiles to aircraft from sources such as Man Portable Air Defense Weapon Systems (MANPADS) especially against those slow climbing aircraft that contribute to the transportation of armed forces around the world. The resulting product of this research could give the military a more sure and dependable capability to guard against this threat.</p> <p>This funding will be used to focus on research and lab equipment necessary to develop a laboratory for working with Infrared (IR) signature reduction. Crane Naval Surface Warfare Center along with Purdue University will provide the technology evaluation and testing for the reserach carried out to counteract these threats. Research will include candidate design assessments against various current and incoming-in-service IR missiles, including the effect of various atmospheric condition and clutter background.</p> </div>					9499	FY 2005	FY 2006	FY 2007		Accomplishments / Effort / Sub-total Cost	1.254	1.250			RDT&E Articles Qty				
9499	FY 2005	FY 2006	FY 2007																
Accomplishments / Effort / Sub-total Cost	1.254	1.250																	
RDT&E Articles Qty																			

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EXHIBIT R-2a, RDT&E Project Justification				DATE:
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA 5		0604270N, EW DEVELOPMENT	9999 Congressional Adds	
C. PROGRAM CHANGE SUMMARY				
Funding:		FY 2005	FY 2006	FY 2007
Previous President's Budget:		1.288		
Current President's Budget:		1.254	1.250	0.000
Total Adjustments		-0.034	1.250	0.000
Summary of Adjustments				
Congressional Reductions				
Congressional Rescissions				
Congressional Undistributed Reductions				
		-0.034		
Congressional Increases				
			1.250	
Economic Assumptions				
Miscellaneous Adjustments				
	Subtotal	-0.034	1.250	0.000
Schedule: Not Applicable.				
Technical: Not Applicable.				

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R-1 Shopping List Item No. 98